Course Title - Materials and Methods for Engineering Technology  
Course Prefix and Number – ENGT 2304  
Department - Engineering Design  
Division - Technology and Business  
Course Type: (check one)  
☒ Academic General Education Course (from ACGM – but not in WCJC Core)  
☐ Academic WCJC Core Course  
☐ WECM course (This course is a Special Topics or Unique Needs Course: Y ☐ or N ☐)  

Semester Credit Hours #: Lecture Hours #: Lab/Other Hours #: 3:3:0  
Equated Pay hours for course - 3  

Course Catalog Description - A continuation of the study of the nature, origin and properties of building materials, methods, and equipment for their integrated use in completing construction projects. A study of selecting and specifying materials with consideration for economy, quality and performance in the construction of modern buildings. This course is included in the Field of Study Curriculum for Engineering Technology. It introduces students to proper terminology and usage of wood, steel, and concrete materials and selected manufactured components.

Prerequisites/Co-requisites – CNBT 1309 (or archived CNST 1361)

Prepared by: Jo Ann Shimek  
Review by Department Head: Jo Ann Shimek  
Accuracy verified by Division Chair: David Kucera  
Approved by Dean or Vice President of Instruction: Leigh Ann Collins  
Date: 06/11/15  
Date: 06/11/15  
Date: 07/15/15  
Date: 3-3-16
I. **Topical Outline** – Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, clinical or other non-lecture instruction):

- **Designing Buildings and Building Systems**
- **Foundation systems** - loads, footing, slab on grade, grade beams, piers, piles
- **Exterior walls** - wood components, concrete components, steel components
- **Building Envelop Systems** - roofing, siding, windows, doors
- **Building Material - Wood** - lumber production, properties, standard sizes, built-up shapes, erection methods, building codes
- **Building Material - Concrete** - ingredients, placement methods, formwork, reinforcing
- **Building Material - Steel** - standard sizes, typical spans, built-up shapes, erection methods, building codes
- **Masonry Construction - CMU** standard sizes and shapes, placement methods
- **Roofing Systems** - wood components, concrete components, steel components
- **Windows, Interior, Floors, Finishes**

II. **Course Learning Outcomes**

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<tr>
<th>Learning Outcomes</th>
<th>Methods of Assessment</th>
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<tr>
<td>Upon successful completion of this course, students will:</td>
<td>Written test</td>
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<td>Upon the completion of the course students will demonstrate the ability:</td>
<td>Final exam</td>
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<td>Define common terminology and Units of Measurements</td>
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<td>Explain composition and properties of common building materials</td>
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<td>Identify standard sizes and shapes of building material.</td>
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<td>Determine conformance references and testing techniques</td>
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<td>Classify products, systems and interface issues</td>
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<td>Describe selected assembly techniques and equipment usage</td>
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<td>Explain building code functions, standards and requirements</td>
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III. **Required Text(s), Optional Text(s) and/or Materials to be Supplied by Student.**

Fundamentals of Building Construction, Materials and Methods by Edward Allen and Joseph Iano; John Wiley and Sons, Inc.

IV. **Suggested Course Maximum** - 20

V. **List any specific spatial or physical requirements beyond a typical classroom required to teach the course.**

Projector, access to PowerPoint
VI. Course Requirements/Grading System – Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course

Four to Five Major Exams
Final Project
Tests and Final Project all equally weighted - 100%
A = 100 -90
B = 89-80
C = 79-70
D = 69-60
F = 59 or below

"C" or above in all degree specific classes

VII. Curriculum Checklist

☑ - Academic General Education Course (from ACGM – but not in WCJC Core)
   No additional documentation needed

☐ - Academic WCJC Core Course
   Attach the Core Curriculum Checklist, including the following:
   • Basic Intellectual Competencies
   • Perspectives
   • Exemplary Educational Objectives

☐ - WECM Courses
   If needed, revise the Program SCANS Matrix & Competencies Checklist.